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1117 MERCHANTS BANK BUILDING
INDIANAPOLIS, INDIANA

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U. T. A. School of Printing
Indianapolis

GRADING PUPILS IN VOCATIONAL SUBJECTS*

Among administrative problems in education it is safe to say that the importance of none has been more largely underestimated than that of grading pupils. Even superficial scrutiny will convince an observer that almost universally the grades or marks given at the end of stated periods are at best, "blanket" or "omnibus" grades and have little, if any, significance to teacher or pupil in the way of indicating progress in acquiring desirable physical, mental and spiritual habits. Regardless of how conscientious teachers are, grades as ordinarily given may, with propriety, be referred to as "covering a multitude of sins." Times without number has the writer questioned teachers relative to the true meaning of A+ or B grades only to receive a cold and somewhat disturbing stare accompanied by some such response as, "It means that his work for the term has been such as to entitle him to this grade," or, "I don't understand you, I don't see what you can possibly have in mind." When pressed further their responses revealed that not for a moment had thought been given in daily or weekly grading to progress made by pupils in acquiring those dispositions and habits without which life cannot be a success.

The significance of ordinary daily, weekly or term grades, when they have any significance whatever, may doubtless be stated in terms of the amount of subject matter mastered when compared with the total amount to be mastered. And this is true whether the subject be Literature, History, Algebra, Latin, or any of the more modern school subjects. Is this the way it should be? Are teachers dealing fairly with pupils when their methods of grading are such as to gloss over the very characteristics which the cold world values most? May it not truthfully be said by pupils who later succeed that they do it in spite of our methods rather than because of them? Is it not incumbent upon teachers to analyze success in terms of the original and acquired powers and capacities involved and from this derive a working schedule for daily guidance? Some pertinent questions on grading may be of assistance:

- (1) What are your reasons for grading your pupils?
- (2) When you give a grade what is its fullest possible significance to you? To your pupil?
- (3) What relation, if any, should obtain between those dispositions, aptitudes, habits, etc., which determine success in life and your method of grading?
- (4) What bearing, if any, should society's cold, calculating method of evaluating human worth have upon your method of grading pupils?
- (5) Of what significance for teachers should society's method of attaching unequal values to "success" factors have?

*In this monograph the term, "grading," has the usual significance of marking or rating. The more inclusive term, "vocational subjects" is used in spite of the fact that the subjects referred to herein are popularly referred to as "shop" or "trade" subjects.

WHY TEACHERS GRADE PUPILS.

The average teacher rates or grades pupils for one or more of the following reasons: (1) to comply with administrative demands; (2) that more adequate information regarding the pupil's progress may be possessed; (3) that facilities may be provided whereby the pupil may be informed of his successes and failures. In the majority of cases compliance with administrative regulations consists in reporting a letter or per cent grade at the end of a stated period, e. g.: month, term, or semester. However, in a few cases, it consists in recording daily, weekly or monthly progress in such form as to enable all concerned to have definite information regarding quality and quantity of pupil accomplishments. Credit for this too infrequent but desirable condition belongs to the few educational workers who have the initiative to break away from traditional policies and to think unobstructedly in terms of social needs. That more administrators have not acted in this way has, however, not been altogether due to lack of disposition. Nor can they be charged with incapacity to prosecute reformatory measures. In many cases they have not acted because school boards have refused to furnish clerical assistance, thus necessitating large expenditure of time and energy by supervisors in doing work which could be done twice as well by capable clerks and for one-fifth to one-half the cost.

Whenever the writer has asked conscientious teachers who habitually keep detailed records of pupil progress the primary purpose of such painstaking action the most common response has been: "that I may know definitely from day to day how fully each of my pupils has mastered the subject matter." Occasionally, to be sure, the response referred to the possibility of more accurate grading for the month, term, or semester. Rarely was mention made of the obligation resting upon all who serve as guides to make known to their charges not only wherein they fall short or succeed, but likewise how they may improve the quality and increase the quantity of mental products. Rather did it have reference largely to the quantity of such matter assimilated or, more truthfully speaking, memorized. In short, responses almost uniformly indicated complete acceptance of what might be termed "quantity of subject matter" rather than "quality of mental process" policy in education.

The third type of teacher is found in one form or another, though not frequently, in all school systems. To inform pupils of their shortcomings has become little short of an obsession with many. But such teachers invariably belong to the "quantity of subject matter" group and are largely innocent of the possibilities involved in determining what constitutes success in human endeavor and administering to schoolroom activities accordingly. In this group will also be found those worthy devotees of the measuring or rating scale. Much commendation is due these for moving in the right direction, for thinking in terms of those human dispositions, attitudes, powers, capacities, etc., which determine success, and for attempting to prepare usable record cards in conformity therewith. It is regrettable though that in their zeal to devise a practicable system of rating pupils they have not at-

tached due weight to such factors as the necessity of frequent grading, i. e.: more often than monthly, convenience in size of cards, intelligibility of terminology both for teacher and pupil and accessibility of card to pupil. However, the complex and somewhat cumbersome record card devised by some is a great improvement over the ordinary "blanket" or "omnibus" method of evaluating pupil effort. It remains to reduce it to a simpler, a more convenient and therefore a more serviceable form.

WHY AND HOW TEACHERS SHOULD GRADE PUPILS.

To say that in order to further its interests society has adopted, fostered and perpetuated the school as one of its necessary institutions, and that every phase of its administration whether it is choice and provision of texts, recreational facilities, organization and presentation of subject matter or any other aspect of school activity should be prosecuted primarily for the purpose of bringing direct or indirect benefit to the pupils is to call attention to an already recognized and accepted fact. The universal acceptance accorded this truth, however, does not seem greatly to influence administrators and teachers when in actual contact with pupils. Inability or unwillingness to think and act today in terms of what a child will be or should be five or ten years hence is a common weakness not limited by any means to school men and women. It is equally true of all adults. Yet such thought and action must take place if the best interests of youth and, therefore, society are to be promoted. For sane methods of administering to human needs are made possible only through proper evaluation of all factors concerned, in short, through rationalizing one's conduct.

Every administrative problem involves consideration of

- (a) the nature of the raw material;
- (b) the nature of the product desired, and
- (c) a method of dealing with the raw material.

In considering this problem theses which will be maintained are:

(1) A system of rating or grading pupils must be based upon fundamental human capacities and powers and the relative values attached to these by society.

(2) Opportunity should be provided for ready evaluation by teachers of the few most important "success" factors involved in class exercises or operations.

(3) A system of marking must (a) be intelligible to both pupil and teacher, and (b) be readily accessible to pupils, and (c) really inform pupils in terms of daily life wherein they are succeeding or failing.

(4) The scheme should be flexible enough to permit attaching different values to the different factors in accordance with various stages of maturity of pupils.

To any one conversant with the educational literature of the last few decades there is nothing startling in the statement that an important obstacle to normal development in pupils is the almost complete

divorcement of school from life outside. And despite improvements which have been made this condition still widely prevails. Disinclination to take advantage of accepted economic practices is no more strongly evidenced anywhere than in connection with passing value upon the worth of pupil effort; and, in no case, is it fraught with more disastrous results. The world puts a premium upon specific human capacities, powers and dispositions, all of which in undeveloped form are present in pupils.

As an instance of what is considered invaluable in social and economic life note the explanation of an army inspector as to why so many candidates fail to secure commissions:

"The most glaring fault," he says, "noted in aspirants to the Officers' Reserve Corps,—might be characterized by the general word 'slouchiness,' a mental and physical indifference."

"A great number of men have failed because of inability to articulate clearly."

"Many men fail to measure up to the requirements because they have not been trained to appreciate the importance of accuracy in thinking."

"A last important element that seems lacking in the mental and moral make-up of some of our students is the characteristic of 'grit.'"

Those in charge of the young may well inquire to what degree they are responsible for these deplorable indispositions and incapacities in those who aspire to command; and what modifications in methods are necessary in order that the same thing may not later be said of those now in school.

Fifteen minutes' conversation with any wideawake employer will substantiate the claim that the all-important factors in successful competition are: workmanship ability, co-operative ability, regularity, punctuality, etc. And such an employer will soon inform you, if questioned, that by workmanship ability he means initiative, i. e., knowing how to start and starting on a job, accuracy, neatness, speed, ability to make small adjustments and repairs when necessary, care of machinery, tools, etc.

Moreover teachers of trade subjects not only recognize the justice of the employer's attitude but maintain that the "blanket" grades they are giving daily or weekly are really intended to comprehend these identical factors. At the same time they readily admit the inadequacy of a method of grading which does not accord in detail with the pressing needs of life and in turn specifically informs pupils wherein they are weak or strong.

But almost without exception they have failed or refused to recognize this in grading schemes. When factors have been singled out in passing judgment upon a pupil's work they have quite uniformly been: ability to gain and retain facts, reasoning power, and skill in manipulation. A study of marking systems, however, reveals astonishingly few administrators, not to mention teachers, who have gone even this far toward improving the unsound "blanket" system of grading.

The fact that in one instance immature rather than mature persons are being dealt with should not seriously affect the program. Regardless of their immaturity, at least so far as pupils in trade subjects are concerned, they must, of necessity, have approximately the same mental and physical experiences when performing mechanical operations and when trying to comprehend the processes involved as they would if mature. They must handle tools and equipment with an ultimate purpose in mind, they must meet and overcome difficulties, they must, or should be expected to, complete tasks within certain time limits, and, finally, they must or should maintain a quality of workmanship consistent with their respective capabilities. Defense of these claims is unnecessary. For teachers in trade work, and others as well to a large degree, readily admit the justice of the position taken.

An experience of several years in training teachers of trade subjects has taught the author that no single group of teachers has more definite ideas than they as to what should result from class room activity. Yet, on the other hand, doubtless no teachers as a whole are more innocent of ways and means of realizing their ideals. The heritage of ordinary schoolroom procedure has been helpful in some ways; but whether more helpful than detrimental is questionable. Certainly the heritage in methods of grading pupils has so many undesirable features connected with it that it is proving to be a mill-stone rather than a life saving device.

During the past year several wide-awake teachers of trade subjects in Indianapolis have attacked some of their problems in a most praiseworthy manner, and with beneficial results which, it is believed, will not be limited by any means to vocational or trade fields. Our important piece of work prosecuted by them consisted in an analysis of the elements involved in successful classroom procedure and final agreement on the factors which, in their judgment, should receive specific attention in grading pupils.

Among the factors mentioned and discussed were, attention, interest, initiative, originality, neatness, accuracy, speed, care of tools and equipment, attitude toward work, independence, persistence and co-operativeness. From this list the following were agreed upon as best satisfying conditions: attitude toward work, originality, self-directive ability, quality of workmanship, care of tools and equipment, and speed. Extended discussion resulted in the conviction that the form of statement could be much improved in some of the above cases; that teachers of drawing and design uniformly attached greater importance than other trade teachers to originality; that while certain factors in the list would have much weight in one stage in the pupil's education they should be largely disregarded at another; and finally, that the relative values which should be attached to the different factors would vary throughout the pupil's career; e. g., speed, should be regarded as of minor importance until after the elementary principles and processes of the trade have been covered.

When attention was turned to the specific task of preparing a card suitable for grading pupils in accordance with the ideals afore-

mentioned, many perplexing points had to be decided. For example, it was realized that if the pupils like to have an evaluation of their efforts daily or at least upon the completion of a set or assumed task then there was strong reason for believing that frequent judgments should be passed by the teacher. Moreover, a few of the teachers had compared results when grades were given at long intervals with those when they were given daily and were convinced of the superiority of the latter method. Provision, therefore, for frequent grading had to be made. But if, as had been agreed upon, pupils profit more from frequent grades than from occasional ones then ready access to grades must obtain. In this connection also, consideration had to be given to suitability of card for daily record purposes, for filing and for reference. In addition, room had to be provided for the essentials of identification.

It appeared further that the subject-matter of mechanical drawing and design is such as to make a different form of card highly desirable. Outside of this, individual reaction to the problem is wholly responsible for the variation in card forms.

It will be noted that in each instance opportunity is provided (1) for grading pupils quickly in terms of those factors which are indispensable to success in life regardless of one's vocation; (2) for recording daily or less frequent grades; (3) for showing attendance and tardiness; (4) for indicating essential identification data; (5) for controlling various aspects of classroom procedure through use of demerits; (6) for convenience in handling by pupil and teacher and for filing; (7) for weighting the different factors differently in accordance with the judgment of instructor or the composite judgment of the various instructors.

Among the innovations and reforms necessitated by the adoption of such record forms none will be more bitterly assailed than the insistence upon accessibility of cards to pupils and what this implies. So universally have teachers adopted and practiced the "blanket" system of grading and administrators the monthly notification scheme that the advantages of this more open, more just and more effective method are likely to be overlooked. Apropos to this Superintendent Harris of Franklin, Ohio, writes:

"The grade book is open for inspection by the pupils but too frequent inspection is not encouraged because of the time consumed. I have had many teachers object to these 'open' grades at first as they prefer to keep them secretly. I consider this secret grading unfair. To grade openly requires a little more firmness, a little more character, if you please. And it forces the teacher to give a 'square deal,' something not always practiced in secret grading. Besides it effectively eliminates all excuses for charging partiality to the teacher and relieves us of the 'teacher's pet' business. Teachers who have used it awhile invariably like it and do not want to return to the old method."

It is the author's belief that pupils in vocational schools are of such maturity that the only effective way of administering to their

needs is by informing them frequently, preferably each day, how teachers evaluate their respective attitudes and accomplishments. Disregard for or undervaluation of the great and continuous influence of approval and disapproval and of personal encouragement and discouragement upon pupils' lives is responsible for the method of giving infrequent "blanket" grades. That much of the carelessness and unfairness which unavoidably characterizes the practice of infrequent and secretive grading will be made improbable, if not impossible, by the method suggested, all teachers will admit. To be sure conscientious, thoughtful teachers soon possess such intimate knowledge of their pupils that they unconsciously govern themselves in accordance with the policy advocated. But as the class increases in size this becomes much more difficult, and finally impossible except to rare members of the profession.

CARD FORM 1.

| CHECK | NAME | ROLL ROOM | WEEK NO | 1 | | | 2 | | | 3 | | | 4 | | | 5 | | | | | |
|-------|------------|-----------|---------|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|
| | | | | A | B | C | A | B | C | A | B | C | A | B | C | A | B | C | | | |
| 65 | John Smith | | 15% | Attitude | | | | | | | | | | | | | | | | | |
| | | | | Value | | | | | | | | | | | | | | | | | |
| | | | | Efficiency | | | | | | | | | | | | | | | | | |
| | | | | Direction | | | | | | | | | | | | | | | | | |
| 54 | John Smith | | 20% | Speed | | | | | | | | | | | | | | | | | |
| | | | | Value | | | | | | | | | | | | | | | | | |
| | | | | Workmanship | | | | | | | | | | | | | | | | | |
| | | | | Attendance | | | | | | | | | | | | | | | | | |
| | | | | DAILY RECORD CARD | | | | | | | | | | | | | | | | | |
| | | | | SCHOOL | | | | | | | | | | | | | | | | | |
| | | | | SUBJECT | | | | | | | | | | | | | | | | | |
| | | | | BENCH | | | | | | | | | | | | | | | | | |
| | | | | REPORT NO | | | | | | | | | | | | | | | | | |
| | | | | TERM ENDING | | | | | | | | | | | | | | | | | |
| | | | | TOTAL POINTS | | | | | | | | | | | | | | | | | |
| | | | | GRADE | | | | | | | | | | | | | | | | | |
| | | | | 1 2 3 4 5 6 7 | | | | | | | | | | | | | | | | | |
| | | | | A B C D | | | | | | | | | | | | | | | | | |

This card form is the work of H. F. Markus, teacher of electrical work at the Arsenal Technical Schools, Indianapolis.

This card form indicates the record of a pupil for 17 days together with identification data. The reverse side of the card shows a record of work completed daily. The black circles represent the punch marks. In actual practice pupils are required to fill in all identification blanks at the beginning of the term under the instructor's direction. During the shop period each pupil places his card in a special pocket provided in his tool box thus making it available for immediate reference. When work is completed in class, pupils are required to record the same on the back of the card. At the end of each shop

Reverse Side of Card Form 1

| DAILY RECORD OF WORK DONE | |
|---------------------------|----------------------|
| M | B & A. Wiring |
| T | B + A. Wiring |
| 1W | B + A. Wiring |
| T | B + A. Wiring |
| F | B + A. Wiring |
| M | First alarm circuit |
| T | First alarm circuit |
| 2W | Shop work |
| T | Shop work |
| F | Shop work |
| M | Electrical Machinery |
| T | Electrical Machinery |
| 3W | Electrical Machinery |
| T | Electrical Machinery |
| F | Absent |
| M | Experimental Work |
| T | Experimental Work |
| 4W | |
| T | |
| F | |
| M | |
| T | |
| 5W | |
| T | |
| F | |

REMARKS.

period the pupil is graded on each of the four points mentioned. If the pupil neglects to present his card he loses his grade for that day. The majority of grades are A, B, and C, in which case the punch mark is adequate. Exceptionally good marks are indicated by a plus sign and exceptionally poor ones by the vertical line. Since these are not frequent the author considers the three grade arrangement better than one requiring a larger card. Demerits signify misbehavior or carelessness of any sort and lower the pupil's record. When reports are due at the office each pupil is required to hand in on a separate slip the summation of his grades. The office requires reports in terms of five grades, A+, A, B, C, and D, corresponding respectively, to the per cents, 96-100, 90-95, 80-89, 70-79, and below 70. For convenience in computing the grades, though this may not be mathematically accurate, an A+ counts 10, A-9, B-8, C-7, and D-5 points. Absence counts 0 and demerits count minus 8. The pupil adds up all the grades given on a certain factor as, for example, workmanship which totals 126; since workmanship in this case has a value of 40 per cent the pupil finds 40 per cent of 126 which is 50.4 points. When he has treated each factor in the same way and added the different totals he has arrived at his total number of points. The author maintains that his card has the following points of merit: 1st, it calls the pupil's attention each day to his strong and weak points in such a way that he is enabled to intelligently reorganize his efforts; 2nd, the instructor is enabled to give daily grades on several factors within the space of 3 or 4 minutes, in fact while the pupils are preparing for

dismissal; 3d, the card promotes closer co-operation between pupil and teacher since by this method the teacher must face each pupil daily and grade in terms of the pupil's attitude and responses; 4th, it places a premium on consistent daily work and regularity in attendance; a sudden "speeding up" at the home stretch has relatively little effect on the final factor; 5th, the cards are convenient for filing and are invaluable for future reference; 6th, the extra space at the right hand side of card may be used for grading projects or for recording additive or subtractive items in case, for administrative reasons, absence has been necessary.

Owing to the fullness of comment, explanation and recording of this card detailed treatment is unnecessary in connection with the other card forms.

CARD FORM 2.

| | | | | | | | | | | | | | | | | |
|------------------|-------------|------------------------|----|-------------|-------|------|-------|--------------|-------|-------|----|---------|--------|---|-------|--|
| 1-2 | HOUR | DEPT. | | | | | | | | | | | | | | |
| | | SCHOOL | | | | | | | | | | | | | | |
| 58 | R.R. | CITY | | | | | | | | | | | | | | |
| NAME. John Smith | INSTRUCTOR. | LOCKER KEY. | 15 | DRAWER KEY. | | | 15 | CHECK NUMBER | | | 25 | DEMERIT | ABSENT | | TARDY | |
| | | | | MON. | TUES. | WED. | THUR. | FRI. | WEEK | | 1 | 2 | 1 | 2 | | |
| | | SELF DIRECTION | B | C | B | A | B | B | | | 3 | | | 3 | | |
| | | | C | B | C | B | B | | | 4 | 5 | 4 | 5 | | | |
| | | ACCURACY | | | | | | | | 1 | 2 | 1 | 2 | | | |
| | | | | | | | | | | 3 | | | 3 | | | |
| | | SPEED | B | C | B | C | B | | | 4 | 5 | 4 | 5 | | | |
| | | | | | | | | | | 1 | 2 | 1 | 2 | | | |
| | | ATTITUDE | A | B | B | C | B | | | | 3 | | | 3 | | |
| | | | C | B | B | A | A | | | 4 | 5 | 4 | 5 | | | |
| CARE OF TOOLS | | | | | | | | 1 | 2 | 1 | 2 | | | | | |
| DEPOSIT | | ENTERED SEPT. 8, 1918. | | | | | | | GRADE | TOTAL | | TOTAL | | | | |
| REFUND | | WITHDREW | | | | | | | | | | | | | | |

Edward E. Greene, teacher of sheet metal work in the Arsenal Technical Schools of Indianapolis, is responsible for the above card. Attention is directed to the slight variation in terminology. Accuracy should be interpreted as equivalent to workmanship.

Distinctive features of this form are: (1) substitution of figures for days in recording absence, tardiness and demerits; (2) provision for recording money deposit and refund of same; (3) arrangement for keeping record of entrance and withdrawal from class; (4) necessity of using pencil or pen for marking grade; (5) provision for marking pupil on individual points for successive Mondays, etc., in same unit of space, and (6) place for recording weekly and final grades, total demerits, absence and tardiness.

The author of the above form believes that the points enumerated on the card are sufficiently inclusive to cover the major essentials of any class session and that the best interests of the pupils may be promoted only through marking on each point daily. It is his opinion that unless constant watchfulness on the teacher's part prevails, many high school pupils will become careless and actually retrogress.

CARD FORM 3.

| | | | | | | | | | | | | | | | | |
|-------------------------|---------|------|----------------|---------------|---------------|----------------|--------------------|----------------------------|----------------|---------------|---------------|------------------|-------------|-----------|--|--|
| NAME <i>Stacy Quinn</i> | 5-6 | HOUR | SCHOOL _____ | DEPOSIT 50 | ENTERED | POINTS 194 | WEEKLY GRADE | | | DAILY GRADE | | | | | | |
| | 51 | | | | | | RR. | TERM ENDING 6-13-18 | WEEKLY AVERAGE | | | FINISHED PROJECT | | | | |
| | 83 | | | | | | TOOL CHECK NO. 401 | REPORT NO. 4 | | | GRADE | | | ADVANCE B | | |
| | | | | | | | | SUBJECT <i>Carpentry I</i> | | | TEACHER _____ | | | FINAL | | |
| 95 | KEY NO. | 95 | REFUND 1-28-18 | VALUE 2.5 | 15 | 30 | 15 | | | 15 | | | | | | |
| | | | ABSENT | TARDY | DEMERIT | SELF-DIRECTION | SPEED | WORKMANSHIP | CARE OF TOOLS | | | ATTITUDE | | | | |
| | | | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | | | |
| | | | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | | | | |
| | | | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | | | | |
| | | | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | | | | |
| | | | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | | | | |
| | | | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | | | | |
| | | | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | | | | |
| | | | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | | | | |
| | | | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | M T M T M T | | | | |
| | | | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | W F TH F TH F | | | | |

This card was prepared by Jacob L. Jones, teacher of Carpentry at the Arsenal Technical Schools, Indianapolis. Note that pupil has received 1 demerit, an A+ in self-direction, an A in speed, a C in workmanship, and daily grades in care of tools and attitude.

Distinguishing features of this card are provision 1st, for grading daily on some points and weekly on others; 2nd, for giving any one of five grades on any point; 3rd, for marking weekly average, and 4th, for final grade on finished project. The author comments upon the card as follows: "I look upon the grade given to the pupil as equivalent to reward or pay for work done. If he is absent he receives no pay; if he has been excused for administrative reasons a grade may be given when the work is made up. Tardy and demerit marks may be used against the pupil if it seems advisable. It is essential that teachers be permitted to assign different values to the different factors since the same values may not appropriately be assigned to the same factors in all courses and in all grades. Provision for marking the finished project is made since owing to the nature of the work it is sometimes impossible to complete the project in a week and some-

times even in five weeks." For finding the weekly average the author offers the following:

| | | | | | | | |
|----------------|---|------|--------|-----------|----------|--------------------|-------------|
| Attitude | { | 1-B | equals | .85 | Assigned | Average Value | Points |
| | | 1-C | equals | .75 | | | |
| | | 3-D | equals | 1.80 3.40 | | | |
| | | | | 5 | | | |
| Care of tools | { | 2-A | equals | 1.90 | equals | .87 | × .15=.130 |
| | | 2-B | equals | 1.70 | | | |
| | | 1-C | equals | .75 4.35 | | | |
| | | | | 5 | | | |
| Workmanship | { | 1-C | equals | .75 | equals | .75 | × .30=.225 |
| Speed | | 1-A | equals | .95 | equals | .95 | × .15=.1425 |
| Self-direction | | 1-A+ | equals | 1.00 | equals | 1.00 | × .25=.250 |
| | | | | | | Weekly grade .8495 | |

CARD FORM 4.

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| NAME <u>John Doe</u> | | | | | | | | | | R.R. 49 INSTRUCTOR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DESK NO. <u>22</u> | | | | | | | | | | DRAWING <u>22d</u> DESIGN | | | | | | | | | | KEY NO. <u>18</u> | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | 1 st Sheet | 2 nd Sheet | 3 rd Sheet | 4 th Sheet | 5 th Sheet | 6 th Sheet | 7 th Sheet | 8 th Sheet | 9 th Sheet | 10 th Sheet | 11 th Sheet | 12 th Sheet | 13 th Sheet | 14 th Sheet | 15 th Sheet | 16 th Sheet | 17 th Sheet | 18 th Sheet | 19 th Sheet | 20 th Sheet | |
| | | | | | | | | | | | | | | | | | | | | WORKMANSHIP | A | B | C | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | ORIGINALITY | C | B | A | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | INTEREST | A | A | B | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | SPEED | B | A | A | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | CARE & TOOLS | A | B | C | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | DEMERIT | | 1 | 2 | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | TOTAL POINTS | B | B | C | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | 1 st GRADE <u>B</u> 2 nd GRADE _____ 3 rd GRADE _____ FINAL GRADE _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

D. F. Griffin, teacher of pupils in electrical drawing at the Arsenal Technical Schools, is responsible for this card. Attention is directed to the simpler form of card, the use of the term, interest, in place of attitude and the substitution of originality for self-direction.

Owing to the nature of the subject a card of simpler form than the others is possible. Instead of giving grades daily they are given upon the completion of individual sheets. Where several days are required for completing one sheet, as is occasionally true even in elementary work, the method set forth on the card is open to adverse

criticism. Doubtless attitude toward work and care of instruments are of sufficient importance to merit daily marking. On the other hand the author's provision for checking demerits, at least partially counterbalances this weakness.

While it is recognized that certain plausible objections to the use of such a plan may be raised, at the same time it is believed that these objections are of little significance, comparatively speaking. The supreme object has been and is to devise, introduce and develop a scheme of grading which has a much sounder psychological basis than those universally employed. To do this, as has been already pointed out, necessitated careful evaluation of many factors, the time and energy of the teacher being no inconsiderable one. In order to protect the teacher, facilities for recording judgment quickly is provided, while to protect the pupil, provision is made for acquainting him with the points upon which society's appraisal of his efforts will be based, for giving him some idea as to the importance of the various "success" factors in his life and for daily stimulation along lines consistent with successful business practice.

In conclusion attention is called to an administrative problem upon which this study has important bearing and which, so far as the author's experience has gone, is usually overlooked or ignored. Vocational schools especially—though in a sense the same is true of all schools—must gain and hold the respect of men engaged in industrial pursuits or they will be facing as discouraging a situation two decades hence as they now are. Let quality of product be their watchword for a few years and both employers and organized labor will gladly champion their cause on any and every occasion. At present administrators either do not or cannot see this. Otherwise why do they place twice as many pupils in vocational classes as can be accommodated, why do they hire teachers (?) who have only a smattering of knowledge and skill, why do they send or permit their teachers to "shuffle off" their most troublesome, most indisposed and most ignorant pupils upon teachers of these classes, why do they ignore the education of the pupil in order that the annual expense account may be reduced a few hundred dollars, why do they ask for such quality and quantity of production that the teacher has no time to instruct however capable or disposed he may be, and finally, why do they encourage, or at least sanction, public exhibitions for which the teacher rather than the pupils is primarily responsible? We may expect wholesome results in this field as soon as administrators exhibit enough common sense and courage to make impossible these just but uncomplimentary charges. Until then we may as well be resigned to our fate.

If the point of view represented in this monograph contributes in some slight way toward introducing a program of action which will merit the respect of business men with sound judgment, men who rightly demand tangible results, the author and his students will feel amply repaid for giving to the public the results of their humble efforts. It is their belief that among the most desirable objects in educational circles is that of more wholesome respect from men who are in search of trade knowledge and skill. And it is to hasten the day

when this state of affairs will prevail that they send forth what they believe to be a sane and serviceable idea.

Should it call forth merely destructive criticism they will regret their efforts. Should it provoke discussion of constructive nature they will be pleased since they are confident that self-improvement, that much-to-be desired thing in teachers, is certain to be fostered thereby. Finally, should teachers in this field consider it of sufficient worth to put it to the test their fondest hope will have been realized and they will indeed feel highly complimented.

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The figure is a map of the study area, showing the location of 100 sampling stations. The map includes a grid of latitude and longitude coordinates. The stations are marked by numbers 1 through 100. The stations are distributed across a coastal area, with a higher density in the central and southern regions.

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